

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION**

**PRINTING RESEARCH, INC.
HOWARD W. DEMOORE and
RONALD M. RENDLEMAN,**

Plaintiffs,

v.

**WILLIAMSON PRINTING
CORPORATION, BILL L. DAVIS and
JESSE S. WILLIAMSON,**

Defendants.

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CIVIL ACTION NO. 3-99CV1154-M

**EXPERT REPORT OF RAYMOND
J. PRINCE UNDER FEDERAL RULE 26(a)(2)(B)**

1. I make this report based upon my knowledge as to the factual matters set forth below and upon my own opinions as to matters set forth as such. This report relates to litigation between the above referenced parties. My involvement is as a "technical expert" on lithographic and flexographic processes, presses and components thereof and trends in the printing arts; plus retraction devices therefor. For consulting work I charge \$1,350/day (\$168.75/hr), including trial plus expenses. If called as a witness in this case, I would testify as follows:

**I.
MY EDUCATION AND WORK EXPERIENCE**

2. Reference is made to a detailed resume of my education and work experience, etc. current to the date of this report, and is presented herein in its entirety as an attachment, my *curriculum vitae*, Exhibit "A" hereto. I am senior technical consultant in the Technical Services Group at the Graphic Arts Technical Foundation (GATF) in Pittsburgh, Pennsylvania. I

presently consult with about thirty (30) companies, of which Williamson Printing Corporation ("WPC") is one. I travel extensively throughout North America to consult with my clients, who are generally commercial printers, packaging printers, label printers, magazine printers, wine label printers, and book printers. I teach printing courses for GATF and for Rochester Institute of Technology, as well as for Printing Industries of America ("PIA") affiliates and for most of the graphic arts trade shows.

3. I received an Associates degree and a Bachelor of Science degree from Rochester Institute of Technology in 1963 and 1965, respectively. I received a Masters of Science in Printing Management from South Dakota State University in 1966. I have won a number of medals, including a medal this year from the National Association for Printing Leadership ("NAPL") - the Soderstrom Medal for Lifetime Achievement Award. I have also won in 1992 from NAPL the Craftsman of the Year Award, 1994 from GATF, the Industry Education Award, and in 1998 the Technical Association for the Graphic Arts ("TAGA") Honors Award for Lifetime Achievement.

4. I have written a number of articles and books, set forth in Exhibit "B" hereto.

5. I have not consulted in any other litigation in the past five years.

6. I have been asked the following questions:

(a) What was the state of the art as of mid-1992 to mid-1994 with respect to the use of flexography in lithographic presses?

(b) What was the state of the art from May 1992 - June 1994 with respect to

(1) Retractable coaters?

(2) Anilox rollers?

(3) Chambered doctors?

(c) Did WPC provide sufficient information to PRI in mid June, 1994 (Baker, Baker Supp., Bird, Bird Suppl., Bird 2d Suppl. Declarations) for a person of ordinary skill in the art of making auxiliary printing equipment to make an interstation flexo unit for use in the flexo/litho process of the '363 patent? If not, was it sufficient by the end of 1994 after transmission of additional information to Bird (See Bird Suppl. Decl., ¶¶ 3-5)?

(d) With respect to PRI's developmental drawings of Interstation printer/coater options

(1) linear rack back (disclosed in their drawing of 12/5/94), and

(2) cantilevered device (12/5/94 and 12/30/94)

were these drawings, alone, sufficient to teach one of ordinary skill at that time of the '363 process? If not, did any of the December PRI drawings do so, alone or in combination?

(e) Does application Serial No. 08/435,798, as filed, enable one of ordinary skill to practice the '363 process?

(f) Did Bill Davis and Jesse Williamson have a conception in June 1992 - which I understand is a concept so complete and well defined that it could be reduced to practice when told to one of ordinary skill in the art and without undue experimentation?

(g) Did the concept of Davis and Williamson as described by them to Bowyer in 1992 and subsequently to Baker and Bird in 1994 embrace the retractable flexo unit shown in Fig. 2 of the '363 patent?

(h) Was the flexographic/lithographic process described in the '363 patent an advance in the art? A significant advance? What is the relationship between the WIMS '976 patent ("WIMS I") and the '363 process ("WIMS II")?

(i) Do any of the claims of Serial No. 08/435,798 as originally filed, cover Davis and Williamson's process?

(j) Do any of the claims of Serial No. 08/435,798 as originally filed, cover the device of Fig. 2 of the '363 patent?

(k) Do any of the claims of Serial No. 08/435,798 as those claims exist now before the PTO cover the Davis and Williamson process?

(l) Do any of the pending claims of Serial No. 08/435,798 cover the apparatus of Fig. 2? If so, are those claims within the prior art?

(m) Was the EZI device actually installed at Williamson an advance in the art?

(n) Is the subject matter of any of the allowed claims of Serial No. 08/435,798 beyond the level of skill in the art as of May 1995?

(o) Has WPC won any awards in the printing arts for creativity?

(p) How does WPC rank in technology in the printing arts versus other printers?

(q) What is Printing Research, Inc.'s ("PRI") reputation in the industry?

(r) Has PRI won any awards?

(s) How does PRI rank in technology in research and development versus other printing research institutions?

(t) Are any of the claims of U.S. Patents 5,960,713 and 6,116,158 supported by the disclosure in Serial No. 08/435/798?

7. In reaching the conclusions set forth herein, I have reviewed:

<u>Bucket</u>	<u>Descriptions</u>	<u>Bates Nos.</u>
A	PRI's Drawings;	Various
B	U.S. Patent No. 5,370,976 to Williamson, et al.; U.S. Patent No. 5,630,363 to Davis, et al.;	PRI01055-PRI01062, W000010-W000017
C	U.S. Patent No. 5,638,752 to Hartung, et al. and 5,476,042 to Ehrhard et al.;	W012899-W012913
D	Declarations - master List (all declarations submitted in reissue application, including those of reissue applicants and Ray Prince, and third party witnesses Baker, Bird, Garner and Brown, etc.);	W012914-W013389
E	Paper submitted October 13, 2000 to PTO entitled REISSUE APPLICANTS FIRST SUBMISSION OF DEPOSITION TESTIMONY AND SUBMISSION OF SUPPLEMENTAL DECLARATION, including Depositions of Baker, Bird, Brown and Garner and exhibits and recent (October 5, 2000) Supplemental Declarations of Baker and Bird; and recently submitted expert reports of Pravel and Professor Mott;	W013390-W014323
F	Pleadings by the parties in this case, including proposed counterclaims of Defendants;	W014325-W014398
G	Plaintiffs' and Defendants' responses to interrogatories, requests for admissions and document requests;	W014399-W014496
H	The expert reports of Pravel and Professor Mott as tabbed in "E" above;	W014497-W014526
I	Various copies of Serial No. 08/435,798, as filed May 5, 1995 and a counterpart EP0741025(A3);	W01349-W01409; W014527-W014595
J	U.S. Patent No. 5,598,777, U.S. Patent No. 5,651,777, U.S. Patent No. 5,960,713 (Ray Prince studied this in detail and testified about the '713 in the PTO); U.S. Patent No. 6,116,158;	W014596-W014699
K	Original Reissue Application as filed 5-20-99, including original cut-up specification and proposed claims;	W014701-W014768

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T09250"96/5T50

<u>Bucket</u>	<u>Descriptions</u>	<u>Bates Nos.</u>
L	PTO Protest of DeMoore, et al., in PTO reissue, September 1999;	W014769-W014771
M	First Office Action in PTO reissue mailed February 9, 2000;	W014772-W014786
N	Amended and Cut-up Specification and Reissue Applicants' Position on Patentability with Attached Declarations of Baker, Bird, Brown, Bird supplement, and Garner filed April 7, 2000;	W014787-W015270
O	Supplemental amendment filed July 7, 2000 in the reissue application;	W015271-W015475
P	First supplemental statement of prior art and other information filed May 20, 1999 (original set of prior art);	W015476-W015801
Q	Second supplemental statement of prior art and other information filed July 17, 2000 (art not previously included and mentioned in Item "N" above and abroad and in Serial No. 08/435,798;	W015802-W016603
R	Third supplemental statement of prior art and other information filed September 26, 2000 (the Hartung, et al. patent Item "C" above and Declaration including Ray Prince's Third Supplemental Declaration);	W016604-W016616
S	Fourth supplemental statement of prior art and other information filed September 29, 2000 (including Canadian brochure and Ray Prince's Fourth Supplemental Declaration);	W016617-W017040
T	Deposition of Bill Davis (not concluded);	W017041-W017230 and exhibits of other numbered series
U	Deposition of Ron Rendleman (not concluded);	W017231-W017552 and exhibits of other numbered series
V	Deposition of Jesse Williamson (not concluded);	W017553-W017775 and exhibits of other numbered series
W	Deposition of Howard DeMoore (not concluded);	W017776-W018097 and exhibits of other numbered series

<u>Bucket</u>	<u>Descriptions</u>	<u>Bates Nos.</u>
X	File History EP 620,115 (counterpart to U.S. Patent 5,638,752) and English translations of European applications; KVA Opposition and decision and prior art K1-K7 cited by Opponents	W018098-W018865
Y	Prior Art to Exhibit 2	W018867-W019721
Z	Selected portions of File History, U.S. Patent 5,960,713	W02038-W02663
AA	File History, Serial No. 08/435,798	W01670-W02034

8. With respect to the questions in paragraph 6, I have the following responses:

(a) As of mid-1992, the industry had little, if any, use of flexography in lithographic presses. The lithographic and flexographic printing processes were generally not used together at that time, and were performed by different tradesmen on radically different types of machinery. I recall MAN-Roland introduced its 700 series having a coater end-of-press in September 1993 at the IPEX Exhibition at Manchester, England. By mid-1994, Heidelberg Drucksmaschinen A.G. started experiments in Germany with the construction of press with an end-of-press anilox roller. In this time frame, rapid advancements were being made in the resolution of flexographic plates and printing, but still the flexographic and lithographic arts were operated by different tradesmen. The first marriages of flexographic to lithographic with respect to lithographic presses were strictly end-of-press applications. Flexographic plate technology (resolution and stability of a small dot) was improving from mid-1992 to mid-1994.

(b) Retractable coaters in this time period were used primarily in the folding carton industry to apply water-based protective coating. The primary reasons for a retractable coater were that tower coaters were expensive, and generally not available. A tower coater at this time, as a practical matter, could not be retrofit to an existing press. Auxiliary coaters were made for a particular model of a press of a known manufacturer, and varied in at least seven known designs, of which a great number of patents and brochures existed in the early 1990s. A number of vendors existed in the United States

making auxiliary retractable coaters: Dahlgren, Rapidac, Epic, Oxy-Dry and others. Perhaps as many as five hundred or more of auxiliary retractable machines existed in the United States. Dahlgren was the leader in the field. There was a controversy in the industry with respect to how to best coat a water-based or UV-based coating. Both anilox and smooth roller systems existed side-by-side. For water-based coatings in the folding carton industry, the roller of choice was anilox due to consistency of volume. In the commercial printing industry, the system of choice was the smooth roller to provide very high gloss. The chambered doctor came about and had been used in non-press applications for the primary reason of consistency in coating weight. After WPC had achieved its proprietary '976 WIMS technology, it was faced with a problem of getting a large pigment particle size to the sheet of paper. From his 37 C.F.R. §1.131 declaration (executed June 3, 2000, W012997-13005), and his subsequent declaration signed September 22, 2000 (W013263-13279), I understand Jesse Williamson, while in Germany in late May 1992, thought about using flexography with a chambered doctor blade for the sole purpose of applying a thick, consistent coating ink to a printing plate. Use of the chambered doctor blade was a viable way to apply a thick consistent pigmented coating. Dahlgren had started to use it in its end-of-press auxiliary coaters, principally using the DiRico patented technology. I have participated as an expert in the reissue application to U.S. Patent 5,630,363, Serial No. 09/315,796, and agree with Davis and Williamson's comments about the prior art in their Reissue Applicants' Memorandum Concerning the Prior Art and Position of Patentability (W014812E-AA) filed on April 7, 2000. Reissue Applicants' Second Supplemental Statement of Prior Art and Other Information (W015802-16603) provides a fairly comprehensive list of the prior art, both patent and industry literature. There were a variety of prior art auxiliary systems used as of mid-1994: inclined, horizontal, vertical, transverse, ferris, four-bar and combined (Note also prior art binders (W018866-19721)). In my opinion, as of 1994 DiRico, Bird, Dahlgren, Satterwhite, were leaders in the auxiliary equipment art.

coating tower in end-of-press applications, with no detail as to the type of special anilox rollers to engage the plate cylinder. Left out of these February 1995 drawings is the drying unit between the two towers. The drawings provided by PRI do not disclose the Davis/Williamson '363 process. A number of drawings apparently show in handwriting comments that Rendleman or DeMoore gave their lawyers since the beginning of this lawsuit. I have visited WPC and studied the PRI auxiliary equipment actually installed at WPC. I would be hard-pressed to see how one of ordinary skill could build and install any of these auxiliary pieces from the December 1994 - March 1995 drawings, as the equipment actually exists.

(e) I studied Serial No. 08/435,798 during the prosecution of the reissue to U.S.

Patent 5,630,363 and incorporated my comments in paragraph 11 to my Supplemental Declaration signed March 15, 2000. Serial No. 08/435,798 did not at that time enable one of ordinary skill in the art to make

a workable device consistent with the teaching of the '798 application, let alone enable one to practice the '363 process. The teachings are confusing because the applicants are trying to teach too many things.

There are too many options. The options to the plate and the "double bump" are not credible. Why would someone want to contact the plate cylinder? More research would have had to be taught on the "resilient anilox roller" and the relative advantages of the "double bump" concept. The first interstation ferris wheel devices made by PRI which were sold to WPC only contacted the blanket cylinder. It is my opinion that one of ordinary skill in the art reading the PRI application on May 4, 1995 would have been greatly confused by it. The '798 application does not teach the apparatus on the WPC presses.

(f) The answer is yes. Minor experimentation was needed, but not undue. I have read the Joint Declaration (1) Under 37 C.F.R. §1.131 and (2) Pertaining to Derivation by DeMoore and Printing Research, Inc. of Reissue Applicants' Invention (W012997-13047 and Exhibits), Declaration of Jesse Speight Williamson (W013262-13279), Declaration of Harry Bowyer (W013287-13311) and Declaration of Gary Doughty (W013312-13328). One of ordinary skill in coating technology and printing technology working for a manufacturer of equipment that specializes in coaters as well as press

auxiliary equipment would have been able to reduce the Davis/Williamson concept to practice (see ¶8, Williamson Declaration at W013265). I note also ¶4 of the Bowyer Declaration (W013288), which indicates Bowyer understood what Williamson and Davis meant by the three options of performing the Davis/Williamson process.

(g) The '363 patent Fig. 2 embraces a retractable auxiliary unit having an anilox roller and a chambered doctor. The particular geometry - the "ferris wheel" concept - was one of several different geometries already known in the art. Such a geometry is not material to the operation of the '363 process.

(h) The method disclosed in the '363 patent was most assuredly an important advance in the art - the answer is a resounding yes. It allowed for a larger pigment size to be placed on the substrate, thereby increasing brilliance. I believe U.S. Patent No. 5,370,976 ("976") WIMS I teaches the process of producing integrated metallic separations in detail and the process of printing with them. The Davis/Williamson '363 patent teaches an improvement to that process - the use of flexography instead of lithography for the printing of gold and silver. Absent a prior knowledge of WIMS I ('976), there would be little or no reason for one skilled in the art to try the process disclosed in the '363 patent. The advance in brilliance of depositing gold and silvers is equally matched by the in-line continuous process advance, which made the process of the '363 patent much more economical than a process requiring two or more passes.

(i) The answer is no. Only claims 24-34 are method claims. Claims 24 and 30 are the only independent method claims. Claim 24 pertains to spot coating and does not require the application of flexographic inks - literally any ink could be used. Use of an anilox roller is not mentioned. Claim 30 is not the '363 process: in a two-stage press, one takes a printing plate and one performs spot printing. There is no requirement of using the flexographic inks. There is no requirement of using an anilox roller.

(j) In my opinion, if at all, perhaps Claim 17 can relate to '363 Fig. 2, although many necessary appropriate limitations are missing, e.g., flexographic inks, and an anilox roller for application of flexographic inks.

(k) I have read the prosecution through the summer of 2000 for Serial No. 08/435,798. Exhibit C hereto contains what is represented to me as the pending claims, including 5 allowed claims. The answer to the question is no. There are no process claims.

(l) Possibly Claim 17, if at all. Claim 1 is a "double bump" apparatus - not Fig. 2 of the '363 patent. For Claims 12 and 13, I do not read "plate or blanket" as pertaining to Fig. 2, and many of the additional critical limitations are missing. Claim 17 is "loose" and has many critical limitations missing. Limitations involving flexographic inks and an anilox roller are missing. There are some clerical errors in this claim as pending. I am giving PRI the benefit of the doubt.

(m) The '363 process is an advance. Apart from the process, the unit from my observation does have some smart features - it does not intrude on the basic Heidelberg press. On the other hand, it is my opinion it is an "α" version (i.e., first generation) and needs a larger diameter anilox roller. The units at WPC have had "bouncing" problems. The ferris wheel concept - which is old in the art - is a good concept, but the execution of Davis and Williamson's design by PRI should be improved. I observed the PRI auxiliary equipment at WPC, and it utilized parts all existing as of 1994.

(n) The answer is no. Allowed claims 6 and 9 have extra features, all of which are in the prior art and were obvious to employ: e.g., power actuators, bell cranks, cleavis plates, doctor blades. Reference to options such as "plate or blanket" limitation is inoperable as taught in the specification. Claim 18 has a "double cradle" limitation and is drawn to an inoperably described embodiment ("double bump"). Claim 19 describes a tower coater adaption of an end-of-press auxiliary unit. Claim 21 has the same "end-of-press" tower coater as Claim 19. None of the five allowed claims

describe Fig. 2 of the '363 patent. The bulk of the rejected claims were rejected on Bird taken in view of Sarda. That rejection is proper. Other references could have been substituted for each of Bird and Sarda.

(o) Awards are given for the printing of individual pieces. WPC has hundreds, if not a thousand awards for individual pieces for print quality and visual appeal, both at the local and national level. For the last three years, WPC has been rated as number one in this country. They have halls lined with prizes.

(p) WPC is, in my opinion, one of the very top (top 10) of leading commercial printers in the United States. The equipment in pre-press and press is state-of-the-art.

(q) Printing Research has a good reputation due to its Super Blue™ and BacVac™ products. It is a reputation of vigorously defending its patent position.

(r) Printing Research has won one - and only one award from GATF (Intertech Award) - in the mid-1980s for its SuperBlue technology.

(s) In the perception of the printing industry, PRI ranks below each of Dahlgren and Epic in the auxiliary coater market. They have a better reputation in IR drying than UV drying. To this day, PRI is really known as a "one-horse" shop - its SuperBlue product. I have reviewed the patents assigned to PRI (W002867-W03583). Very few of these patents appear to me to be commercial. U.S. Pat. 4,402,267 was the "SuperBlue" patent. U.S. Pat. 4,691,267 also perhaps pertains to "SuperBlue".

U.S. Pat. 5,127,329 pertains to the "BacVac" as perhaps do some of the downstream U.S. Pats.

5,133,255; 5,205,217; 5,243,909; 5,419,254 and 5,488,905, which are all related applications. U.S. Pat.

5,335,596 perhaps pertains to a commercial chambered doctor. U.S. Pat. 5,425,809 may be commercial.

U.S. Pat. 5,511,480 is the "SuperBlue II" patent. U.S. Pats. 5,603,264; 6,073,556; and 6,119,597 are

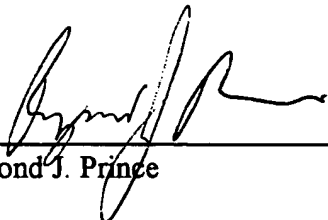
other "SuperBlue II" patents and may be pertinent. U.S. Pat. 5,966,836 may pertain to a commercial IR

dryer, as does U.S. Pat. 6,088,931. Most of the patents appear to be "paper patents". Apart from

"SuperBlue" and "BacVac", DeMoore does not have a reputation in the industry as a major inventor.

(t) None of the claims of DeMoore, et al. U.S. Pats. 5,960,713 and 6,116,158 have any support in Ser. No. 08/435,798. Note my Second Supplemental Declaration of Raymond J. Prince executed June 29, 2000, ¶¶8-14 concerning the '713 patent. The '158 patent claims have largely the same problems.

9. The opinions given herein are based solely on the testimony and other documents listed in paragraph 7 above, and the undersigned reserves the right to change, to alter, or to enhance his testimony upon the review of additional testimony or other documents.



Raymond J. Prince

Dated: November 15, 2000

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing Expert Report of Raymond J. Prince under Federal Rule 26(a)(2)(b) was served on Plaintiffs' counsel by placing a true and correct copy thereof in the United States Mail, postage prepaid, on the 17 day of November, 2000, addressed as follows:

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Raymond J. Prince
Senior Technical Consultant, Technical Services Group
Graphic Arts Technical Foundation

Raymond J. Prince is a senior technical consultant in the Technical Services Group at the Graphic Arts Technical Foundation (GATF) in Pittsburgh, Pa.

A 38 year industry veteran, Mr. Prince conducts Technical Plant Assessments (TPAs) in response to technical inquiries from GATF members and industry. GATF's TPA program offers in-plant analysis of a printer's production facility and capabilities. To date, Mr. Prince has completed 730 TPAs.

As a printing specialist and troubleshooter, Mr. Prince represents technical seminars, in-plant training programs, and contributes technical information to GATF textbooks and Technical Services Reports. Additionally, he provides technical problem-solving articles called "How I See It" for *GATTWorld*, GATF's bimonthly magazine.

Mr. Prince has also co-written the GATF texts, *Solving Sheetfed Offset Press Problems* and *Solving Web Offset Press Problems*, and was the author of *Testing the Accuracy of the Step-and-Repeat Machine*, a GATF Technical Services Report.

As a lecturer and trainer, Mr. Prince teaches the following GATF seminars: "Troubleshooting in Your Printing Plant," "Paper and Ink Problems," "100+ Ideas on Producing Consistent Quality," "Solving Paper and Ink Problems in the Pressroom," "Error Prevention," "How to O.K. Color on Press," "Overcoming the Top 20 Pressroom Problems," "Slashing Make-ready," "The Future of Printing," and "Creating a Trouble-Free Prepress Department." He also presents "Color for the Production Pressroom," "Lithographic Relationships and Variables," and "Lithographic Troubleshooting" at the Rochester Institute of Technology. He has presented over 390 lectures.

Mr. Prince is a member of the Board of Directors of the National Scholarship Trust Fund (NSTF) and chairs their Marketing/Fund-Raising Committee. In 1991 he was named president of the Technical Association of the Graphic Arts (TAGA). Prior to that he served as TAGA's executive vice president. Prince has also contributed four technical papers to TAGA Proceedings, an annual compendium of scholarly technical papers. In 1996 TAGA named a graduate fellowship in his honor.

In 1992 the National Association of Printers and Lithographers named Mr. Prince Craftsman of the Year. In 1994 he received GATF's Industry Education Award, and he also achieved the Certified Quality Systems Lead Auditor Status from the Registrar Accreditation Board (RAB) of the American Society for Quality Control.

He had been a GATF technical consultant for fourteen years before he assumed the post of senior technical consultant in 1992. He previously served GATF from 1966 through 1970 as administrative and technical specialist in the Special Programs Department, where he coordinated continuing education programs, seminars, workshops, and conferences.

Upon leaving GATF in 1970 Mr. Prince joined Azoplate, a division of American Hoechst Corporation, as an application manager directing the design, development, and manufacture of graphic arts equipment. He also determined if cost and quality requirements for company products were met.

In addition to a B.S. in printing management from the Rochester Institute of Technology, Mr. Prince has an M.S. in printing management from South Dakota State University.

EXHIBIT

A

W013080

GATFWorld Articles by Raymond J. Prince

- "Streaking."** January/February 1989. Page 10.
"Monday Morning Color Systems Calibration." January/February 1989. Page 10.
"Press Settings." March/April 1989. Page 12.
"Counter Etching of Plates." March/April 1989. Page 12.
"High-Quality One-Color Production." May/June 1989. Page 32.
"Test Methods and Considerations for Mechanical Ghosting in Lithography." July/August 1989. Pages 19-23.
"Contacting." September/October 1989. Page 24.
- "Process Control for the Small Plant."** January/February 1990. Page 22.
"Roller Durometer." March/April 1990. Page 18.
"Opaquing: Base or Emulsion Side?" March/April 1990. Page 18.
"Dot Gain." May/June 1990. Page 20.
"Ink and Dampening Solution Compatibility." July/August 1990. Page 17.
"Controlling Density during the Run." July/August 1990. Page 17.
"Film Fit." July/August 1990. Page 17.
"Show Your ID Please." September/October 1990. Page 13.
"Picking Hickeys." September/October 1990. Page 13.
"Dust in the Prepress Areas." November/December 1990. Page 15.
"Power Struggle." November/December 1990. Page 15.
- "How to Gauge Image Fit on Press."** January/February 1991. Page 23.
"Smoothing a Solid." January/February 1991. Page 23.
"Varnish: Fit, Drying and Ghosting." March/April 1991. Page 18.
"Blanket Tips." March/April 1991. Page 18.
"Factors in Matching Press Sheets to Proofs." May/June 1991. Page 19.
"Color Perception." May/June 1991. Page 19.
"Gear Streaks." May/June 1991. Page 19.
"Ink Trapping." July/August 1991. Page 33.
"Controlling Dot Size on Press." September/October 1991. Page 31.
- "Preparing for a Press Test."** January/February 1992. Page 36.
"Image Fit and Register on a Sheetfed Multicolor Press." March/April 1992. Pages 29-32.
"Contacting High-Quality Separations." March/April 1992. Page 36.
"Building Latitude into the Pressrun." May/June 1992. Page 35.
"Extending Life of Dampening Solution." May/June 1992. Page 35.
"Can My Prepress Proof Match the Press Sheet?" July/August 1992. Page 37.
"Film Contacting Fit Problems." July/August 1992. Page 37.
"When to Use One-Piece Final Composite Film." September/October 1992. Page 35.
"Lithographic Ink Waste." November/December 1992. Page 41.

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"Densitometry-Proper Use, Common Errors and Misuses." January/February 1993. Page 21.
"Hickeys-Part 1." March/April 1993. Page 37.
"Hickeys-Part 2." May/June 1993. Page 39.
"Thoughts on Color Bars." July/August 1993. Page 13.
"Stochastic Screening." September/October 1993. Pages 31-32.
"The Fear of ISO 9000 for Small Companies." November/December 1993. Page 27.
"Simple Solution for a Complex Problem." November/December 1993. Page 27.

"Extending and Regenerating Fountain Solution." November/December 1994. Page 20.
"Control of Dot Gain is Getting Worse." November/December 1994. Page 20.

"To Get Quality in the Pressroom, you Have to Define It." March/April 1995. Page 5.
"Successful Customer Color Oks." May/June 1995. Page 14.
"The Importance of Dry and Wet Solid Print Evaluation." July/August 1995. Page 14.
"Image Fit--An Update on the Mechanical Perspective." November/December 1995.
Page 14.

"Troubleshooting Tips for Printers and Suppliers." January/February 1996. Page 10.
"How Closely Can You Match a PANTONE Color?" March/April 1996. Page 6.
"How to Print a "Bad" Paper." May/June 1996. Page 9.
"Trends in Sheetfed Presses." July/August 1996. Page 6.
"Testing a Press for Fit." September/October 1996. Page 5.
"Proofing--The Changing Definition." November/December 1996. Page 8-9.

Books (Contributing Author, Raymond J. Prince):

Solving Web Offset Press Problems, Published by GATF
Solving Sheetfed Offset Press Problems, Published by GATF

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PRINCE EXHIBIT C

Claims of Serial No. 08/435,798
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1. In a printing press of the type having side frame members forming a printing unit tower on which a plate cylinder and blanket cylinder are support for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material directly to a plate mounted on the plate cylinder or directly to a blanket mounted on the blanket cylinder when the inking/coating apparatus is in an operative position; and

a carriage assembly including a support arm having a first end portion pivotally mounted to the printing unit tower and a second end portion pivotally mounted to the inking/coating apparatus, the carriage assembly being movable to an operative position in which the inking/coating apparatus is suspended laterally adjacent to the plate and blanket cylinders, and being movable to a retractable position in which the inking/coating apparatus is elevated with respect to the plate and blanket cylinders.

2. The invention as set forth in claim 1, wherein the inking/coating apparatus comprises:

a doctor blade assembly having a reservoir for receiving ink or liquid coating material;

an applicator roller coupled to the doctor blade assembly in fluid communication with the reservoir, the applicator roller being engagable with a printing plate on the plate cylinder of with a blanket on the blanket cylinder when the inking/coating apparatus is in the operative position.

3. The invention as set forth in claim 2, the applicator roller comprising:

an anilox roller having a resilient transfer surface.

4. The invention as set forth in claim 1, including a counterweight coupled to the support arm.

5. The invention as set forth in claim 1, further comprising:
a power actuator pivotally coupled to the support arm, the power actuator having a power transfer arm which is extendable and retractable; and,
apparatus coupled to the power transfer arm for converting extension or retraction movement of the power transfer arm into pivotal movement of the inking/coating apparatus relative to the support arm.

6. In a printing press of the type having side frame members forming a printing unit tower on which a plate cylinder and blanket cylinder are support for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a plate mounted on the plate cylinder or to a blanket mounted to a blanket cylinder when the inking/coating apparatus is in an operative position;

a carriage assembly including a support arm having a first end portion pivotally mounted to the printing unit tower and a second end portion pivotally mounted to the inking/coating apparatus, the carriage assembly being movable to an operative position in which the inking/coating apparatus is suspended laterally adjacent to the plate and blanket cylinders, and being movable to a retractable position in which the inking/coating apparatus is elevated with respect to the plate and blanket cylinders;

a power actuator pivotally coupled to the support arm, the power actuator having a power transfer arm which is extendable and retractable;

apparatus coupled to the power transfer arm for converting extension or retraction movement of the power transfer arm into pivotal movement of the inking/coating apparatus relative to the support arm;

the movement converting apparatus;

a bell crank plate having a first end portion coupled to the power transfer arm and having a second end portion for engaging a stop member;

a stop member secured to the inking/coating apparatus; and

a cleavis plate secured to the support arm and pivotally coupled to the bell crank plate.

7. The invention as set forth in claim 1, the inking/coating apparatus comprising:
an applicator head having first and second side frame members pivotally coupled to the carriage assembly;

a doctor blade assembly mounted between the first and second side frame members, the doctor blade assembly including a reservoir for receiving ink or liquid coating material;

cradle means mounted on the first and second side frame members, respectively;

an applicator roller mounted for rotation on the cradle means and coupled to the doctor blade assembly for rolling contact with ink or coating material in the reservoir, the applicator roller being engagable with a printing plate on the plate cylinder or with a blanket cylinder in the operative position; and

motor means coupled to the applicator roller for rotating the applicator roller.

8. The invention as set forth in claim 7,
the cradle means including first and second sockets disposed on the first and second side frame members respectively; and,

the applicator roller being mounted for rotation on the first and second sockets.

9. In a printing press of the type having side frame members forming a printing unit tower on which a plate cylinder and blanket cylinder are supported for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a plate mounted on the plate cylinder or to a blanket cylinder mounted on the blanket cylinder when the inking/coating apparatus is in an operative position;

a carriage assembly including a support arm having a first end portion pivotally mounted to the printing unit tower and a second end portion pivotally mounted to the inking/coating apparatus, the carriage assembly being movable to an operative position in which the inking/coating apparatus is suspended laterally adjacent to the plate and blanket cylinders, and being movable to a retractable position in which the inking/coating apparatus is elevated with respect to the plate and blanket cylinders;

the inking/coating apparatus comprising:

an applicator heading first and second side frame members pivotally coupled to the carriage assembly;

a doctor blade assembly mounted between the first and second side frame members, the doctor blade assembly including a reservoir for receiving ink or liquid coating material;

cradle means mounted on the first and second side frame members, respectively;

an applicator roller mounted for rotation on the cradle means and coupled to the doctor blade assembly for rolling contact with the ink or coating material in the reservoir, the applicator roller being engagable with a printing plate on the plate cylinder or with a blanket on the blanket cylinder in the operative position; and

motor means coupled to the applicator roller for rotating the applicator roller;

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the cradle means including first and second sockets disposed on the first and second side frame members, respectively, and third and fourth sockets disposed on the first and second side frame members respectively;

the applicator roller being mountable for rotation on the first and second sockets for applying ink or coating material to the plate when the carriage assembly is in the operative position; and

the applicator roller being mountable for rotation on the third and fourth sockets for applying ink or coating material to the blanket when the carriage assembly is in the operative position.

10. The invention as set forth in claim 1, comprising:

male and female latch coupling members mounted on the carriage assembly and on the printing unit tower, respectively, for releasably latching the carriage assembly in interlocking engagement with the printing unit tower in the operative position.

11. The invention as set forth in claim 1, wherein the support arm comprises an elongated shank portion and a hub portion which extends transversely with respect to the shank portion, the elongated shank portion being pivotally coupled to the inking/coating apparatus and the hub portion being pivotally coupled to the printing unit tower.

12. A sheet fed, rotary offset printing press comprising, in combination:

at least one printing unit or dedicated coating unit having side frame members forming a tower;

at least one cylinder mounted for rotation on the tower for printing ink or coating material onto sheets passing through the printing unit or dedicated coating unit, the cylinder mounting either a plate or a blanket;

inking/coating apparatus including a doctor blade assembly having a reservoir for holding ink or coating liquid, a rotatable applicator roller and means for applying ink or coating liquid from the reservoir onto a peripheral surface portion of the applicator roller; and

support apparatus mounted on the tower for pivotal movement, the inking/coating apparatus pivotally mounted to the support apparatus, the support apparatus movable relative the printing unit tower between an operative position in which the applicator roller is directly engaged with a plate or blanket on the cylinder and a retracted position in which the inking/coating apparatus is support at an elevated position above the cylinder.

13. A rotary offset printing press comprising, in combination:

a plate cylinder having a printing plate mounted thereon;

a blanket cylinder having an ink receptive blanket disposed in ink transfer engagement with the plate cylinder for transferring ink from the image surface areas of the printing plate to the receptive blanket;

an impression cylinder disposed adjacent the blanket cylinder thereby defining a nip between the impression cylinder and the blanket whereby the printing ink is transferred from the blanket to a substrate as the substrate is transferred through the nip;

inking/coating apparatus for applying ink or coating material to the plate or to the blanket;

support apparatus pivotally mounted on the printing press, said support apparatus and said inking/coating apparatus being pivotally connected, said support apparatus being pivotal between an operative position in which the inking/coating apparatus is directly engaged with the

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plate or the blanket, and a retracted position in which the inking/coating apparatus is supported at an elevated position above the press; and

a dryer mounted on the press for discharging heated air on the freshly printed substrate.

14. A rotary offset printing press as defined in claim 13, wherein:

the dryer is mounted adjacent the impression cylinder for discharging heated air onto a freshly printed substrate while the substrate is in contact with the impression cylinder.

15. A rotary offset printing press as defined in claim 13, comprising:

an extractor coupled to the dryer for extracting hot air, moisture and volatiles from an exposure zone between the dryer and the freshly printed substrate.

16. A rotary offset printing press as defined in claim 13, comprising:

a transfer cylinder disposed in an interstation position on the press and coupled in sheet transfer relation with the impression cylinder; and,

an interstation dryer disposed adjacent the transfer cylinder for discharging heated air onto a freshly printed or coated substrate after it has been transferred from the impression cylinder and while it is in contact with the intermediate transfer cylinder.

17. In a printing press of the type having side frame members forming a tower on which a blanket cylinder is supported for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a blanket mounted on the blanket cylinder when the inking/coating apparatus is in an operative position; and

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a carriage assembly pivotally mounted to the tower and to the inking/coating apparatus, said carriage assembly movable between an operative position and a retracted position, said inking/coating apparatus pivoting relative the carriage assembly as the carriage assembly is moved between the operative position and retracted position to maintain a relatively constant orientation to the horizontal, the inking/coating apparatus in direct contact with the blanket cylinder in the operative position and elevated with respect to the blanket cylinder in the retracted position.

18. In a printing press of the type having side frame members forming a tower on which a blanket cylinder is supported for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a blanket mounted on the blanket cylinder when the inking/coating apparatus is in an operative position;

a carriage assembly pivotally mounted to the tower and to the inking/coating apparatus, said carriage assembly movable between an operative position and a retracted position, said inking/coating apparatus pivoting relative the carriage assembly as the carriage assembly is moved between the operative position and retracted position to maintain a relatively constant orientation to the horizontal;

tower including a plate cylinder and a plate mounted on the plate cylinder, the inking/coating apparatus including:

first cradle means for supporting an applicator roller for engagement against the plate when the inking/coating apparatus is in the operative position; and

second cradle means for supporting an applicator roller for engagement against the blanket when the inking/coating apparatus is in the operative position.

19. In a printing press of the type having side frame members forming a tower on which a blanket cylinder is supported for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a blanket mounted on the blanket cylinder when the inking/coating apparatus is in an operative position;

a carriage assembly pivotally mounted to the tower and to the inking/coating apparatus, said carriage assembly movable between an operative position and an retracted position, said inking/coating apparatus pivoting relative the carriage.

20. The invention as set forth in claim 17, further comprising:

a power actuator pivotally coupled to the support arm, the power actuator having a power transfer arm which is extendable and retractable; and,

apparatus coupled to the power transfer arm for converting extension or retraction movement of the power transfer arm into pivotal movement of the inking/coating apparatus relative to the common pivot shaft.

21. In a printing press of the type having side frame members forming a tower on which a blanket cylinder is supported for rotation, the improvement comprising:

inking/coating apparatus for applying ink or coating material to a blanket mounted on the blanket cylinder when the inking/coating apparatus is in an operative position;

a carriage assembly pivotally mounted to the tower and to the inking/coating apparatus, said carriage assembly movable between an operative position and a retracted position, said inking/coating apparatus pivoting relative the carriage assembly as the carriage assembly is moved between the operative position and retracted position to maintain a relatively constant orientation to the horizontal;

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a power actuator pivotally coupled to the support arm, the power actuator having a power transfer arm which is extendable and retractable;

apparatus coupled to the power transfer arm for converting extension or retraction movement of the power transfer arm into pivotal movement of the inking/coating apparatus relative to the common pivot shaft;

the movement converting apparatus comprising:

a bell crank plate having a first end portion coupled to the power transfer arm and having a second end portion for engaging a stop member;

a stop member secured to the inking/coating apparatus; and,

a cleavis plate secured to the support arm and pivotally coupled to the bell crank plate.

22. The invention as set forth in claim 1, wherein the inking/coating apparatus comprises:

an applicator roller having a resilient transfer surface.

23. The invention as set forth in claim 1, wherein the applicator roller is mounted for engagement to a plate in the plate cylinder position, the applicator roller comprising an anilox roller having a resilient transfer surface.

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